

Amendments to Claims

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended): A process for manufacturing a catalyst coated membrane comprising:

- (a) providing an element comprising a preformed highly fluorinated polymer membrane having a first surface and an opposite second surface, and a first temporary substrate that is dimensionally stable in contact with the second surface of the polymer membrane;
- (b) printing a first electrocatalyst coating composition on the first surface of the polymer membrane;
- (c) drying the first electrocatalyst coating composition to form at least one first electrode on the first surface of the polymer membrane of the element;
- (d) applying a second temporary substrate that is dimensionally stable in contact with the first surface of the polymer membrane to the at least one first electrode formed in step (c);
- (e) removing the first temporary substrate that is dimensionally stable from the second surface of the polymer membrane after the completion of step (d);
- (f) printing a second electrocatalyst coating composition on at least a portion of the second surface of the polymer membrane; and
- (g) drying the second electrocatalyst coating composition on the polymer membrane to form at least one second electrode on the second surface of the polymer membrane, so as to form a sandwich comprising the at least one second electrode, the polymer membrane, the at least one first electrode and the second temporary substrate that is dimensionally stable; and
- (h) removing the second dimensionally stable temporary substrate to form a catalyst coated membrane comprising a polymer membrane sandwiched between the at least one first and second electrodes.

2. (Cancelled):

3. (Cancelled):

4. (Cancelled):

5. (Previously presented): The process of Claim 1 wherein the first and second electrocatalyst coating compositions each comprises an electrocatalyst, an ion exchange polymer and a liquid medium.

6. (Original): The process of Claim 5 wherein the ion exchange polymer is perfluorinated.

7. (Previously presented): The process of Claim 1 wherein the first and second electrocatalyst coating compositions each comprise fluorinated polymer.

8. (Original): The process of Claim 7 wherein the fluorinated polymer is a PTFE fibril.

9. (Previously presented): The process of Claim 1 wherein the printing of the first and second electrocatalyst coating compositions is accomplished by flexographic printing.

10. (Previously presented): The process of Claim 1 wherein the printing of at least one of the first and second electrocatalyst coating compositions and drying steps are repeated to form multiple electrode layers covering the same part of the surface of the membrane.

11. (Previously presented): The process of Claim 1 wherein the printing of at least one of the first and second electrocatalyst coating compositions and drying steps are repeated to form multiple electrode layers that vary in composition among said multiple layers.

12. (Previously presented): The process of Claim 1 wherein the printing of at least one of the first and second electrocatalyst coating compositions and

drying steps provide an electrode layer with a predetermined nonuniform distribution of electrocatalyst across the electrode layer.

13. (Cancelled):

14. (Cancelled):

15. (Cancelled):

16. (Previously presented): The process of Claim 1 wherein the second electrocatalyst coating composition printed onto the second surface of the polymer membrane to form the second electrode is in registration with the first electrode on the first surface of the polymer membrane.

17. (Previously presented): The process of Claim 16 wherein the first electrocatalyst coating composition printed on the first surface of the polymer membrane is different from the second electrocatalyst coating composition printed on the second surface of the polymer membrane.

18. (Previously presented): The process of Claim 1 wherein the applying in step (d) is by lamination.

19. (Previously presented): The process of Claim 1 wherein the removing in step (e) is by peeling.

20. (Previously presented): The process of Claim 1 wherein drying in steps (c) and (g) is conducted at ambient temperature.

21. (Previously presented): The process of Claim 1 wherein the first and second dimensionally stable substrates are selected from the group consisting of polyesters, polyamides, polycarbonates, fluoropolymers, polyacetals, polyolefins, and polyimides.

22. (Original): The process of Claim 21 wherein the first, second or both dimensionally stable substrates is polyester.

23. (Withdrawn): A fuel cell comprising a catalyst coated membrane prepared by a process comprising:

- (a) applying at least one electrocatalyst coating composition to an element comprising a polymer membrane having a first and a second surface, and a first dimensionally stable temporary substrate, wherein the coating composition is applied to at least portions of the first surface of the polymer membrane;
- (b) drying the electrocatalyst coating composition to form at least one first electrode on the polymer membrane of the element;
- (c) applying a second dimensionally stable temporary substrate to the at least one first electrode formed in step (b);
- (d) removing the first dimensionally stable temporary substrate from the polymer membrane;
- (e) applying at least one electrocatalyst coating composition to at least a portion of the second surface of the polymer membrane; and
- (f) drying the electrocatalyst coating composition on the polymer membrane to form a sandwich comprising the at least one second electrode, the polymer membrane, the at least one first electrode and the second dimensionally stable temporary substrate.

24. (Withdrawn): The fuel cell of Claim 23 wherein the process for preparing the catalyst coated membrane further comprises:

- (g) removing the second dimensionally stable temporary substrate to form a catalyst coated membrane comprising a polymer membrane sandwiched between the at least one first and second electrodes.

25. (Withdrawn): The fuel cell of Claim 23 wherein the element is prepared by applying a first dimensionally stable temporary substrate to the polymer membrane.

26. (Withdrawn): The fuel cell of Claim 25 wherein the applying is by lamination.

27. (Currently amended): The process of Claim 1, wherein after step (h), the first electrode and the second electrode has a dimensional change less than ~~3%~~ -3%.

28. (Previously presented): The process of Claim 1, wherein after step (h), the first electrode and the second electrode has a dimensional change of from -0.5 to -2%.

29. (Previously presented): The process of Claim 1, wherein after step (h), the first electrode and the second electrode has a dimensional change of from 0 to -2%.

30. (Previously presented): The process of Claim 1, wherein after step (h), the first electrode and the second electrode has a dimensional change of from 0 to -0.7%.